

US PTO Customer No. 25280

Case No. 5390

IN THE CLAIMS

1. ~~(Currently Previously Amended)~~ A method of producing polypropylene tape fibers comprising the sequential steps of

a)extruding a heated formulation of polypropylene comprising at most about

2000 ppm, preferably at most about 1500 ppm, more preferably at most about 1000 ppm, and most preferably below about 800 ppm, of a nucleator compound into a film or tube;

b)immediately quenching the film or tube of step "a" to a temperature which prevents orientation of polypropylene crystals therein;

c)slitting said film or tube with cutting means oriented longitudinally to said film or tube thereby to produce individual tape fibers therefrom; and

d)mechanically drawing said individual tape fibers at a draw ratio of at least 5:1

while exposing said fibers to a temperature of at between about 250 and about 360°C, ~~thereby permitting crystal orientation of the polypropylene therein.~~

2-2. (Original) The method of Claim 1 wherein the amount of nucleator compound present in step

"a" is at most about 1500 ppm.

3-3. (Original) The method of Claim 2 wherein the amount of nucleator compound present in step

"a" is at most about 1000 ppm.

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4. 4. (Original) The method of Claim 3 wherein the amount of nucleator compound present in step

"a" is at most about 800 ppm.

5. Cancelled

6. Cancelled

7. 7. (Currently Amended) The method of Claim 6 wherein the drawing temperature of step "e" is between

270 about 300 and 300 about 360°C.

8. 8. (Canceled)

9. 9. (Currently Currently Amended) The method of Claim 2 3 wherein the heat setting temperature is between about drawing temperature of step "e" is between

300 270 and about 300 450°C.

10. 10. (Currently Currently Amended) The method of Claim 9 4 wherein the drawing heat setting temperature is between about temperature of step "e" is between

300 270 and about 400 300 °C.

11. (New) The method of Claim 1 wherein the quenching temperature in step "b" is at least about 5°C and less than 40°C.

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12. (New) The method of claim 1 wherein said polypropylene tape fibers are comprised of at least one nucleator compound selected from:

- (a) dibenzylidene sorbitol based compounds including for example:  
dibenzylidene sorbitol (DBS), monomethyldibenzylidene sorbitol, such as 1,3:2,4-  
bis(p-methylbenzylidene) sorbitol (p-MDBS), dimethyl dibenzylidene sorbitol,  
1,3:2,4-bis(3,4-dimethylbenzylidene) sorbitol (3,4-DMDBS); or
- (b) sodium phosphate salts such as sodium 2,2'-methylene-bis-(4,4-di-tert-  
butylphenyl) phosphate, or
- (c) lithium phosphate salts.

13. (New) The method of claim 5 wherein said polypropylene tape fibers are comprised of at least one nucleator compound selected from:

- (a) dibenzylidene sorbitol based compounds including for example:  
dibenzylidene sorbitol (DBS), monomethyldibenzylidene sorbitol, such as 1,3:2,4-  
bis(p-methylbenzylidene) sorbitol (p-MDBS), dimethyl dibenzylidene sorbitol,  
1,3:2,4-bis(3,4-dimethylbenzylidene) sorbitol (3,4-DMDBS); or
- (b) sodium phosphate salts sodium 2,2'-methylene-bis-(4,4-di-tert-  
butylphenyl) phosphate, or
- (c) lithium phosphate salts.

14. (New) A method of producing polypropylene tape fibers comprising the sequential steps of

- ( a ) extruding a heated formulation of polypropylene comprising at most  
about 2000 ppm, preferably at most about 1500 ppm, more preferably at

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most about 1000 ppm, and most preferably below about 800 ppm, of a

nucleator compound into individual tape fibers;

( b ) immediately quenching the individual tape fibers of step "a" to a  
temperature which prevents orientation of polypropylene crystals therein;

( c ) mechanically drawing said individual tape fibers at a draw ratio of at  
least 5:1 while exposing said fibers to a temperature of at between 250 and  
360°F thereby permitting crystal orientation of the polypropylene therein.

15. (New) The method of Claim 14 wherein the amount of nucleator compound  
present in step "a" is at most about 1500 ppm.

16. (New) The method of Claim 15 wherein the amount of nucleator compound  
present in step "a" is at most about 1000 ppm.

17. (New) The method of Claim 16 wherein the amount of nucleator compound  
present in step "a" is at most about 800 ppm.

18. (New) The method of Claim 14 further comprising the step of heat setting  
said tape fibers.

19. (New) The method of Claim 14 wherein the quenching temperature in step  
"b" is at least about 5°C and less than 40°C.

20. (New) The method of Claim 14 wherein the drawing temperature of step "c"  
is between 270 and 360 °F.

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21. (New) The method of Claim 21 wherein the drawing temperature of step "c" is between 300 and 360 °F.

22. (New) The method of claim 14 wherein said polypropylene tape fibers are comprised of at least one nucleator compound selected from:

(a) dibenzylidene sorbitol based compounds including for example: dibenzylidene sorbitol (DBS), monomethyldibenzylidene sorbitol, such as 1,3:2,4-bis(p-methylbenzylidene) sorbitol (p-MDBS), dimethyl dibenzylidene sorbitol, 1,3:2,4-bis(3,4-dimethylbenzylidene) sorbitol (3,4-DMDBS); or

(b) sodium phosphate salts, including for examplesodium 2,2'-methylene-bis-(4,4-di-tert-butylphenyl) phosphate or

(c) lithium phosphate salts.

23. (New) The method of claim 18 wherein said polypropylene tape fibers are comprised of at least one nucleator compound selected from:

(a) dibenzylidene sorbitol based compounds including for example: dibenzylidene sorbitol (DBS), monomethyldibenzylidene sorbitol, such as 1,3:2,4-bis(p-methylbenzylidene) sorbitol (p-MDBS), dimethyl dibenzylidene sorbitol, 1,3:2,4-bis(3,4-dimethylbenzylidene) sorbitol (3,4-DMDBS); or

(b) sodium phosphate salts, including for examplesodium 2,2'-methylene-bis-(4,4-di-tert-butylphenyl) phosphate or

(c) lithium phosphate salts.